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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,383	03/01/2004	Wolfgang Becker	3926.070	1064

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EXAMINER
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ELVE, MARIA ALEXANDRA

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/790,383

Applicant(s)

BECKER ET AL.

Examiner

M. Alexandra Elve

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/25/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 & 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinsman et al. (USPN 5,814,784) in view of Baessler et al. (USPN 5,567,335).

Kinsman et al. discloses laser welding whereby one laser beam is used to heat treat and weld a workpiece. The laser beam heats a tool (28) which in turn thermal treats the workpiece. A reflector diverts the beam to the workpiece (figure 4). (abstract, figures, cols. 1-4, 6)

Although Kinsman et al. teaches thermal treatment the actual specifics are not disclosed.

Baessler et al. discloses the welding of a sheet product and a preheat prior to welding. Welding may be conducted in a curvilinear fashion and overlapping may be used. During welding the laser is defocused to negate excessive heating. Additionally, it was observed that preheating minimized temperature gradients and hence allowed for increased welding speeds. It was found that preheating negated 5 to 40% of the thermal energy required. Thus for the production of welded sheet steel bodies a welding

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temperature of 1000 to 1600 C implies a preheat of 100 to 600 C (thus up to 60%).

(abstract, figures, cols. 1-3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to use preheats with the above percentage differences as taught by Baessler et al. in the Kinsman et al. process because this optimizes the welding speed and increases manufacturing efficiency.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kinsman et al. and Baessler et al., as stated in the above paragraph and further in view of Totsuka et al. (USPN 5,303,081).

Kinsman et al. and Baessler et al. do not teach using a scanner to guide the laser beam.

Totsuka et al. discloses a laser beam for welding and annealing workpieces. Scanning is used in butt-welding in order to enhance the strength of the welded seam. The scanning mode is accomplished by oscillating the laser beam left and right.  
(abstract, figures, col. 1, cols. 3-4, col. 6)

It would have been obvious to one of ordinary skill in the art at the time of the invention to use scanning, as taught by Totsuka et al. in the Kinsman et al. and Baessler et al. process because of the enhance strength of the weld seam.

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Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kinsman et al. and Baessler et al., as stated in the above paragraph and further in view of Cutler (USPN 6,706,998).

Kinsman et al. and Baessler et al. do not teach the focus distance.

Cutler discloses the focal distance during laser processing. The preferred focal distance is 50 to 100mm (col. 7, lines 5-15)

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a focal distance, as taught by Cutler in the Kinsman et al. and Baessler et al. process because this is merely one of the standard operating parameters.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kinsman et al. and Baessler et al., as stated in the above paragraph and further in view of Chang et al. (USPN 4,230,930).

Kinsman et al. and Baessler et al. do not teach the defocus distance.

Chang et al. discloses that for laser processing there is a range of defocus distance, that is about 10 to 28 mm. (figures 7, col. 6, lines 14-17)

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a defocus distance, as taught by Chang et al. in the Kinsman et al. and Baessler et al. process because this is merely one of the standard operating parameters.

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Claims 6 & 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchiumi (JP 63-43788 abstract) in view of Baessler et al. (USPN 5,567,335).

Uchiumi discloses the preheating and welding using one laser beam. The laser is defocused for preheating and then focused for welding. Temperature of the board (sheets) is noted to negate material property effects.

Uchiumi does not teach the actual specifics of the thermal treatment.

Baessler et al. discloses the welding of a sheet product and a preheat prior to welding. Welding may be conducted in a curvilinear fashion and overlapping may be used. During welding the laser is defocused to negate excessive heating. Additionally, it was observed that preheating minimized temperature gradients and hence allowed for increased welding speeds. It was found that preheating negated 5 to 40% of the thermal energy required. Thus for the production of welded sheet steel bodies a welding temperature of 1000 to 1600 C implies a preheat of 100 to 600 C (thus up to 60%). (abstract, figures, cols. 1-3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to use preheats with the above percentage differences as taught by Baessler et al. in Uchiumi process because this optimizes the welding speed and increases manufacturing efficiency.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uchiumi and Baessler et al., as stated in the paragraph above and further in view of Totsuka et al.

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Uchiumi and Baessler et al. do not teach using a scanner to guide the laser beam.

Totsuka et al. discloses a laser beam for welding and annealing workpieces. Scanning is used in butt-welding in order to enhance the strength of the welded seam. The scanning mode is accomplished by oscillating the laser beam left and right. (abstract, figures, col. 1, cols. 3-4, col. 6)

It would have been obvious to one of ordinary skill in the art at the time of the invention to use scanning, as taught by Totsuka et al. in the Uchiumi and Baessler et al. process because of the enhance strength of the weld seam.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uchiumi and Baessler et al., as stated in the paragraph above and further in view of Cutler.

Uchiumi and Baessler et al. do not teach using a scanner to guide the laser beam.

Cutler discloses the focal distance during laser processing. The preferred focal distance is 50 to 100mm (col. 7, lines 5-15)

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a focal distance, as taught by Cutler in the Uchiumi and Baessler et al. process because this is merely one of the standard operating parameters.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uchiumi and Baessler et al., as stated in the paragraph above and further in view of Chang et al.

Uchiumi and Baessler et al. do not teach the defocus distance.

Chang et al. discloses that for laser processing there is a range of defocus distance, that is about 10 to 28 mm. (figures 7, col. 6, lines 14-17)

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a defocus distance, as taught by Chang et al. in the Uchiumi and Baessler et al. process because this is merely one of the standard operating parameters.

### ***Response to Arguments***

Applicant's arguments filed 1/9/06 have been fully considered but they are not persuasive.

Applicant argues that Kinsman et al. does not teach a tool for absorbing and transmitting heat. The examiner respectfully disagrees because Kinsman et al. disclose: "The laser beam heats a tool (28) which in turn thermal treats the workpiece".

Applicant argues that the Kinsman et al. workpiece geometry and clamping does not accommodate pressing the tool. The examiner respectfully submits that these limitations are not in instant claims and thus further discussion is moot.

Applicant argues that the area near the weld seam will not be warmed by at least 10 degrees C. the examiner respectfully notes that Baessler et al. discloses that preheating minimized temperature gradients and hence allowed for increased welding speeds. It was found that preheating negated 5 to 40% of the thermal energy required.



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Thus for the production of welded sheet steel bodies a welding temperature of 1000 to 1600 C implies a preheat of 100 to 600 C (thus up to 60%). These temperatures would imply that the area close to the weld (that is, in very close proximity to) would have to be at least 10 degrees C, just by the fact that the weld and preheats range from 100 to 1600 degrees C.

Applicant argues that Baessler et al. does not teach a two-step weld and preheat. The examiner respectfully disagrees because Baessler et al. discloses that preheating minimized temperature gradients and hence allowed for increased welding speeds. It was found that preheating negated 5 to 40% of the thermal energy required. Thus for the production of welded sheet steel bodies a welding temperature of 1000 to 1600 C implies a preheat of 100 to 600 C (thus up to 60%).

Applicant argues that a temperature reduction of less than 50% is not taught. The examiner respectfully disagrees because it was found that preheating negated 5 to 40% of the thermal energy required.

Applicant argues that Kinsman et al. teaches against use of a laser for heat treatment. The examiner respectfully disagrees because Kinsman et al. discloses laser welding whereby one laser beam is used to heat treat and weld a workpiece.

Applicant argues that Totsuka et al. is concerned with a device. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that Cutler does not teach a two-step process. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that Chang does not teach all the limitations of the claim(s). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that Uchiumi does not teach the less than 50%. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that claim 7 is allowable by virtue of its dependency on an allowable claim. The examiner respectfully notes that not allowable subject matter was disclosed in the office action.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

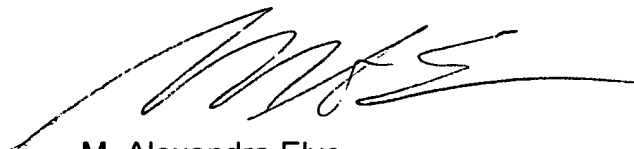
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 6:30-3:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 20, 2006.

A handwritten signature in black ink, appearing to read 'MA Elve', with a long horizontal stroke extending to the right.

M. Alexandra Elve  
Primary Examiner 1725